WHAT IS CLAIMED IS:

1. A balance system comprising:

a crankshaft including a first crankshaft portion, a first crank arm portion, a crank pin portion, and a first eccentric portion, wherein the crank pin portion is coupled to the first crankshaft portion by the first crank arm portion, and is further configured to be coupled to a piston by a connecting rod;

a counterbalance assembly having a first counterbalancing mass portion and a first coupling arm portion that are fixed with respect to one another, and a pin that protrudes from a side of the first counterbalancing mass portion, wherein the first coupling arm portion includes a first circular orifice by which the counterbalance assembly is supported by the first eccentric portion; and

a groove that is capable of receiving the pin, wherein the pin is capable of sliding along the groove and also rotating within the groove, so that the counterbalance assembly is capable of rotating while moving toward and away from the crankshaft.

2. The balance system of claim 1, wherein the crankshaft further comprises a second crankshaft portion, a second crank arm portion and a second eccentric portion, wherein the crank pin portion is coupled to the second crankshaft portion by the second crank arm portion.

3. The balance system of claim 2, wherein the counterbalance assembly further includes a second counterbalancing mass portion and a second coupling arm portion that are fixed with respect to one another, wherein the second coupling arm portion includes a second

circular orifice by which the counterbalance assembly is supported by the second eccentric portion.

4. The balance system of claim 3, wherein the first and second counterbalancing mass portions are held together by way of the pin.

5. The balance system of claim 3, wherein the first coupling arm portion and the first counterbalancing mass portion are integrally formed as a first counterbalance, and wherein the second coupling arm portion and the second counterbalancing mass portion are integrally formed as a second counterbalance.

6. The balance system of claim 5, wherein the first and second counterbalances are identical, and wherein the first and second eccentric portions are at least one of distinct eccentric flanges that are positioned onto the crankshaft and eccentric journals that are integrally formed with the crankshaft.

7. The balance system of claim 5, further comprising a rotating counterweight.

8. The balance system of claim 7, wherein the rotating counterweight includes a first counterweight integrally formed as a first part of the first crank arm portion and a second counterweight integrally formed as a second part of the second crank arm portion.

9. The balance system of claim 1, wherein the pin is substantially parallel to a central axis of the crankshaft, and wherein the groove is at least one of substantially parallel to a piston axis along which a piston reciprocates within the engine, substantially

perpendicular to the central axis, within a plane perpendicular to the central axis, and within another plane formed by the central axis and the piston axis.

10. The balance system of claim 1, wherein a bearing is positioned on the pin, and wherein the bearing fits within the groove.

11. The balance system of claim 1, wherein an end of the pin is received by the groove, and wherein the balance system is employed within at least one of an internal combustion engine and a compressor.

12. The balance system of claim 1, wherein the groove is positioned along an inside surface of a top of a crankcase of an internal combustion engine, and wherein the crankshaft is vertically oriented.

13. An internal combustion engine comprising:

a crankcase;

a cylinder coupled to the crankcase;

a piston within the cylinder;

a crankshaft supported by the crankcase, wherein the piston is coupled to a crank pin of the crankshaft by a connecting rod, and wherein the crankshaft includes an eccentric portion; and

a weight supported with respect to the eccentric portion by a coupling arm, wherein the coupling arm and the weight are fixed in position relative to one another, wherein the weight moves toward and away from the crankshaft as the crankshaft rotates; and

a means for guiding the weight along a path as it moves toward and away from the crankshaft.

14. The internal combustion engine of claim 13, wherein the guiding means includes a pin and a groove.

15. The internal combustion engine of claim 14, wherein the pin is substantially parallel to a central axis of the crankshaft, and wherein the groove is at least one of substantially parallel to a piston axis along which the piston reciprocates within the engine, substantially perpendicular to the central axis, within a plane perpendicular to the central axis, and within another plane formed by the central axis and the piston axis.

16. The internal combustion engine of claim 14 wherein the weight includes first and second weight portions that are identical and coupled to one another by the pin, and wherein the pin includes a bearing that fits within the groove.

17. A method of balancing forces provided by a piston to a crankshaft within a single cylinder internal combustion engine, the method comprising:

rotating an eccentric portion supported by the crankshaft as the crankshaft rotates;

guiding a counterbalance assembly that is supported by the eccentric portion toward and away from the crankshaft along a path, and

allowing the counterbalance assembly to rotate along a moving axis that is substantially parallel to a central axis of the crankshaft as the counterbalance assembly is guided toward and away from the crankshaft along the path.

18. The method of claim 17, wherein the counterbalance assembly includes a counterbalancing mass portion and a coupling arm that are fixed in position relative to one

another, and wherein the coupling arm includes a circular aperture that fits around the eccentric portion.

19. The method of claim 17, wherein the counterbalance assembly includes a pin that protrudes from a side of the counterbalance assembly along the moving axis, and wherein the internal combustion engine includes a crankcase having a groove along an interior side.

20. The method of claim 19, wherein the pin is received by the groove and is capable of both sliding along the groove and rotating with respect to the groove.